LCD Status Panel

037

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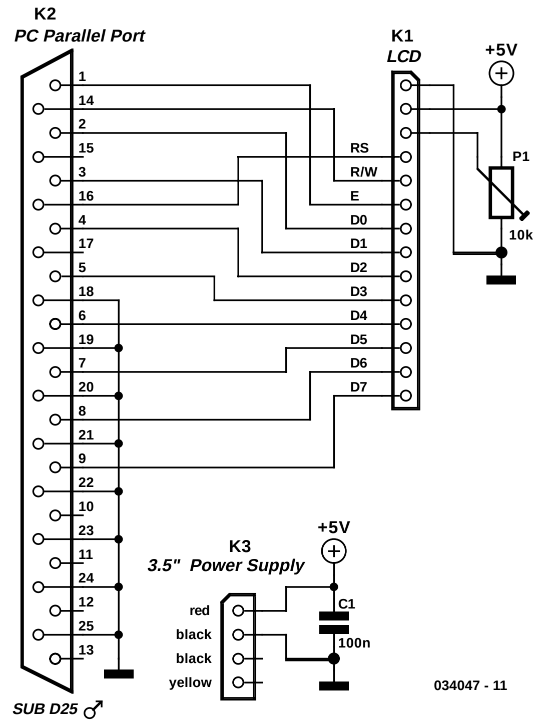

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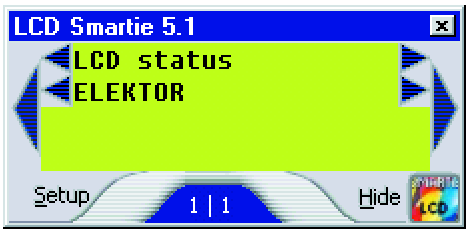

P. Goossens

PCs are currently used for just about anything. E-mail has become a standard communications tool and a network at home is no longer the exclusive domain of geeks. In many households, the stereo is connected to the PC in order to listen to MP3s, etc., etc. There is such a huge choice of software that everyone should be able to find something to their liking and be able to put it to good use. The disadvantage of much software is that it is sometimes hard to see the windows for the screen (well… trees, forest…).

Granted, it is very easy to check whether you have email, to look which track Winamp is playing or keep an eye on the current speed of your internet connection. But it often takes a little bit of hunting around to find this information and it is often obscured when another window is in focus. The end result is that displaying this information inevitably requires several mouse clicks. Not difficult really, but rather cumbersome.

Here we present a solution to this problem: an LCD screen built into the PC enclosure that displays the desired information continuously. This display can easily be mounted on a spare blanking panel of the PC.

The power requirements can conveniently be fulfilled by the PC's own power supply, thanks to the low current consumption. In this case, the plug for a 3.5"-drive has been used, of which there is usually a spare one available.

To keep things cheap, we can use the parallel port for communication between the PC and the LCD. This connector is being used less and less anyway, due to the rise of USB and network printers.

The schematic (**Figure 1**) is very simple, since the parallel port has sufficient inputs and outputs to drive an LCD directly.

Although the circuit requires very little current, it is much better of the power is not obtained from the parallel port directly. As mentioned before, we used a power connector that is normally reserved for 3.5" floppy drives (K3). That leaves potentiometer P1 and capacitor C1. P1 is used to adjust the contrast of the LCD. C1 helps provide a clean power supply without unnecessary interference. You can choose the type of LCD according to your own requirements, provided only that the display contains an HD44780 controller. The software supports the various standard dimensions (from 1×10 characters to 4×40 characters).

The entire circuit is easily built on a piece of prototype board. In our prototype we used a 14-pin header to connect the LCD module. The connection to the power supply is made with a simple 4-way pin header. Make absolutely sure you connect the power supply connector the correct way around, otherwise you run the chance that you use +12 V instead of +5 V, and the LCD is unlikely to survive that!

If the LCD module has a backlight, you may like to connect that as well. It is best to consult the datasheet for the LCD module to check how this is done. Some models require a

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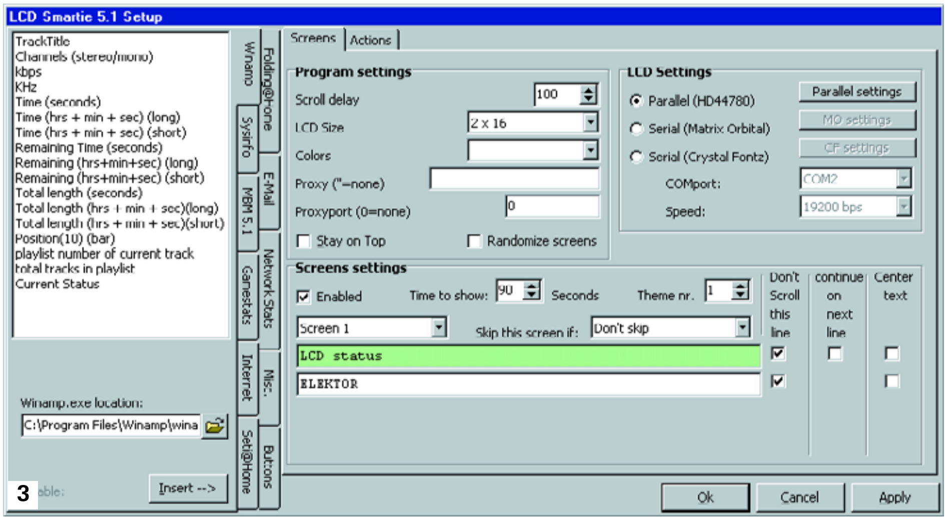

TrackTitle
Channels (stereo/mono)
kbps
KHz
Time (seconds)
Time (hrs + min + sec) (long)
Time (hrs + min + sec) (short)
Remaining Time (seconds)
Remaining (hrs+min+sec) (long)
Remaining (hrs+min+sec) (short)
Total length (seconds)
Total length (hrs + min + sec)(long)
Total length (hrs + min + sec)(short)
Position(10) (bar)
playlist number of current track
total tracks in playlist
Current Status

Winamp.exe location: C:\Program Files\Winamp\wina

able:

Program settings

Scroll delay: 100
LCD Size: 2 x 16
Colors:
Proxy (''=none):
Proxyport (0=none): 0
☐ Stay on Top
☐ Randomize screens

LCD Settings

● Parallel (HD44780)
○ Serial (Matrix Orbital)
○ Serial (Crystal Fontz)
COMport: COM2
Speed: 19200 bps

Screens settings

☑ Enabled
Time to show: 90 Seconds
Theme nr.: 1
Screen 1
Skip this screen if: Don't skip

	Don't Scroll this line	continue on next line	Center text
LCD status	☑	☐	☐
ELEKTOR	☑		☐

series resistor whereas other implementations have this resistor built in. To mount the LCD in a PC, an unused blanking panel is eminently suitable.

Once everything has been built, we need the software to drive the circuit. Several programs are available on the Internet, complete with all the relevant information. The nicest program we have come across so far is ‘LCD Smartie 5.1’. The program can be downloaded from:

http://backupteam.gamepoint.net/smartie/

The capabilities of the program are so extensive that it is a hopeless task to detail them all. The text messages on the display are fully adjustable. The messages can include up-to-date information, such as current username, temperature of the processor, speed of the Internet connection, alerts when new emails arrive, etc. Fortunately, the program is very user friendly, so that everyone will be up-and-running quickly. **Figure 2** shows the Smartie 5.1 emulation of an LCD on the screen, while **Figure 3** shows the program’s configuration screen.

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